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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,270	12/22/2004	Kari Kautio	890A.0003.U1(US)	8980
29683	7590	09/21/2006	EXAMINER	
HARRINGTON & SMITH, LLP 4 RESEARCH DRIVE SHELTON, CT 06484-6212			EL. SHAMMAA, MARY A	
			ART UNIT	PAPER NUMBER
			2883	

DATE MAILED: 09/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/519,270		KAUTIO ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Mary A. El-Shammaa		2883	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8-12, and 14-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Benzoni et al. (US 5,337,398).

Regarding claims 1-4, 10, and 17, Benzoni discloses in the figures, particularly figure 10, a method and an arrangement for aligning at least one optic and/or electronic component on a substrate (12) or a corresponding support structure comprising arranging a hole (50, 52) in the support structure; arranging at least three stud bumps (because of the multiple components being soldered to the substrates, there would necessarily be at least three stud bumps used – see col. 5, lines 13-21) on the surface of the component; arranging said stud bumps along the periphery of the hole for alignment of the component to the hole; arranging the outer surfaces of the stud bumps against the hole walls; threading the optic fiber through the hole; aligning the optic fiber and the component with each other by means of the stud bumps; and arranging the fiber against the inner surfaces of the stud bumps (col. 2, lines 34-63; col. 4, lines 2-51; col. 5, lines 13-60; col. 6, lines 37-62).

Regarding claims 5, 11, and 18, Benzoni discloses in figure 10 the stud bumps having at least partly conical and/or rounded surfaces, and that aligning the optic fiber with the component is performed by adapting the optic fiber along sloping conical inner surfaces and a horizontal brim in the stud bumps (col. 6, lines 37-62).

Regarding claims 6, 12, and 19, Benzoni discloses the component being a surface emitting optoelectronic component, that the optic fiber is arranged perpendicular to the support structure, and that the fiber is connected to a radiating source on a metallized surface of the component facing the substrate (col. 2, lines 34-63; col. 4, lines 2-51; col. 5, lines 13-60; col. 6, lines 37-62).

Regarding claims 8 and 14, Benzoni discloses a direct bonding method being used to connect the stud bumps to the support structure (col. 2, lines 34-63; col. 4, lines 2-51; col. 5, lines 13-60; col. 6, lines 37-62).

Regarding claims 9 and 15, Benzoni discloses the stud bumps are of a solder material and that a solder connection is used to connect the stud bumps to the support structure (col. 2, lines 34-63; col. 4, lines 2-51; col. 5, lines 13-60; col. 6, lines 37-62).

Regarding claim 16, Benzoni discloses the substrate consisting of at least two layers, and that the diameter of the hole portion(s) in the layer(s) near the component is bigger, having place for both the stud bumps and the optic fiber than in other opening portion(s) having a diameter essentially corresponding to the diameter of the optic fiber (col. 2, lines 34-63; col. 4, lines 2-51; col. 5, lines 13-60; col. 6, lines 37-62).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 13, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benzoni.

Regarding claims 7, 13, and 20, Benzoni discloses the claimed invention except for a conductive adhesive being used on the stud bump outer surfaces to accomplish an electrical connection to the support structure. It would have been obvious to one having ordinary skill in the art at the time the invention was made to a conductive adhesive being used on the stud bump outer surfaces to accomplish an electrical connection to the support structure, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. In re Leshin, 125 USPQ 416. The motivation to use a conductive adhesive is that because this is an electro-optic device, it is important to maintain the integrity of the capacity of electricity to flow through the substrate.

***Response to Arguments***

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary A. El-Shammaa whose telephone number is 571.272.2469. The examiner can normally be reached on M-F (8:30am-5:00pm).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571.272.2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2883

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*MAE*

*September 18, 2006*

A handwritten signature in black ink, appearing to read "Frank G. Font".

Frank G. Font  
Supervisory Patent Examiner  
Technology Center 2800